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Statistics and Its Methods

Income in the United States, its Amount and Distribution, 1909-1919.

Vol. I, *Summary*. By the staff of the National Bureau of Economic Research, Inc.: WESLEY C. MITCHELL, WILLFORD I. KING, FREDERICK R. MACAULAY, and OSWALD W. KNAUTH. (New York: Harcourt, Brace and Company. 1921. Pp. xvi, 152. \$1.25.)

The first volume of the Bureau's report on income is a summary intended for general use. In conformity with this purpose it does not discuss details of method, at least not to the extent of justifying them to the statistician and of offering him the opportunity to check up results or to use the same data in a different way. The detailed statistical basis and method of the estimates are to appear in a second volume. Doubtless the extent of use of the work will be much increased by this means. At the same time the reviewer is cut off from opportunity to find fault. Not that there is occasion to complain of this plan of publication, which is well considered. Indeed, it may properly be expected with the appearance of the second volume to give the statistician more in the way of technical details that will enable him to pass judgment upon the estimates than he would otherwise obtain.

The plan of the authors is comprehensive and they have covered the ground adequately. The book is therefore a highly important contribution to economic statistics or quantitative economics (as the reader may prefer), and will doubtless supersede any previous works on this subject for the United States. The following review of the chapters shows what is attempted:

The introductory chapter states the questions to be answered, suggests available materials and methods and indicates the two ways pursued in estimating the national income (one by sources of production and the other by incomes received). The size of the national income is dealt with in the second chapter, the results obtained by the two methods being stated, the composition of the two totals indicated, their combination effected, the amounts reduced to terms of pre-war values, and comparisons made with other countries. The third chapter deals with the distribution of national income, including its distribution between employees and others, amounts and numbers above and below the \$2,000 line, and finally its distribution among individuals. The final chapter briefly summarizes the conclusions. There are also 29 tables and 31 charts, all within the compass of the 149 small pages of the body of the report.

Perhaps one should say this shows what has been done rather than attempted. But the proof of this pudding is not in the eating of *this volume*. Meanwhile the authors show themselves sophisticated in mat-

ters of statistical method and technique. The presumption is that, when we are told more than that this is Mr. King's result and that Mr. Knauth's, we shall find the basis of the estimates acceptable.

There are some limitations upon the significance of the results which are worth stating, even though it is not intended to suggest that the study has not gone far enough for the present. Such a limitation (or several of them) is involved in accepting money (for the purposes of this study) as a final measure of income. The income of farmers is for this reason comparable with that of the rest of the population only with qualifications. Probably farmers did not produce any more (relatively to the total product) in 1919 than in 1910, but they probably *received* much more (again relatively). In 1920 they received less than in 1919 *partly because they produced more*.¹ Monetary terms are not adequate to the quantitative economics involved in such situations. Let us hope that it will be possible ultimately to obtain something more adequate than merely pecuniary means of measuring the material foundations of welfare.

The measurement of income by sources of production suggests a related qualification as to the significance of certain sorts of apparently productive effort. The effort may be wasted, as in the construction of a building that collapses before completion. Is there income in such a case? The effort may be that of bucket-shop touts or sellers of fraudulent stocks. It may be that of personal servants whose time is at the disposal of a woman whose life is merely parasitic. Is there an income-product in these cases? Those occupied in such ways receive income, but it is derivative merely, and those who nominally earn it produce neither material goods nor appreciable net utility. Similar questions might be raised as to the significance for income of the large increase in the number of government employees during the war. These things are mentioned as involving further problems, suggested by, rather than properly included in, the present study. We have not received answers to all important questions regarding income until we are told the extent of potentially productive effort that is diverted by means of derivative income into channels of waste.

Dr. Macaulay criticizes, and thinks he reverses, the interpretation given to the slope of the curve of income as drawn to a double logarithmic scale by previous writers (p. 123, footnote). This statement calls, at least, for further explanation.²

¹The reviewer here refers to the production of goods, not of exchange value.

²The reviewer has been able to refer only to Pigou, but from his remarks it appears that both Pareto and Bowley draw the curve to a vertical scale for income and to a horizontal scale for number of persons—the opposite of the plan of similar curves in the book under review—which fact should have some bearing on what is meant by steepness and slope. The section of the curve of income on which most

The book is an important contribution to quantitative economics in a field where progress in economics is conspicuously needed. It is a long step in the direction of a quantitative theory of the distribution of income to individuals, or to groups and classes of individuals, which will be of more scientific as well as practical value than certain familiar discussions of distinctions between rent and interest.

It is an interesting example of a composite product which appears to have benefited by its multiple authorship. It is to be noted also that this is, in another sense, not a product of individual endeavor. It comes from a statistical organization. Productive scholarship along statistical lines needs the assistance of computers and tabulators and calculating machines and other devices. If our university professors are to be expected to be productive along such lines, it would seem that their statistical departments should be provided with funds for such work. The occasional work of professors in government bureaus does not meet the needs of the situation. The machines will naturally cost relatively less than the books made available in the university libraries and the tabulating and computing personnel should be expected to cost relatively more than the library cataloguers and messengers.

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NEW BOOKS

- DAVIES, G. R. *Introduction to economic statistics*. (New York: Century. 1922.)
- HANSEN, A. H. *Cycles of prosperity and depression in the United States, Great Britain and Germany. A study of monthly data, 1902-1908*. (Madison, Wis.: Univ. of Wisconsin. 1922. Pp. 112. \$1.)
- HÜBNER, O. *Geographisch-statistische Tabellen aller Länder der Erde. 66. Jahrg.* (Vienna: L. W. Seidel & Sohn. 1921. Pp. xv, 158. 15 M.)
- INGALLS, W. R. *Wealth and income of the American people. A survey of the economic consequences of the war*. (York, Pa.: G. H. Merlin Co. 1922. Pp. xiv, 321.)
- MARCH, L. *International Statistical Commission report, with annexes*. (Geneva: League of Nations. 1921. Pp. 35.)
- MARSHALL, W. C. *Graphical methods for schools, colleges, statisticians, engineers and executives*. (New York: McGraw-Hill. 1921. Pp. vii, 253. \$3.)
- ZIZEK, F. *Grundriss der Statistik*. (Munich: Duncker & Humblot. 1921. Pp. 480.)

Professor Zizek sets out to teach us how to construct statistics which are to be depended on and of which the meaning is unmistakable. He is light is thrown by available statistics also has a bearing upon the meaning of the slope.